UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
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March 4, 2014

Scott McLendon
Chief Regulatory Division
US Army Corps of Engineers
Wilmington District
Regulatory Field Office
69 Darlington Avenue
Wilmington, NC 28403

Subject: **EPA NEPA Comments on Draft Environmental Impact Statement (DEIS) for Village of Bald Head Island Shoreline Protection Project - CEQ Number: 20140000**

Dear Mr. McLendon:

Pursuant to Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act (NEPA), EPA Region 4 has reviewed the Draft Environmental Impact Statement (DEIS) for the Village of Bald Head Island (VBHI) Shoreline Protection Project. This DEIS features an evaluation of the environmental consequences of several alternative plans that would address chronic erosion at the western end of South Beach of VBHI with a goal of protecting public infrastructure, roads, homes, businesses and rental properties, golf course, beaches, recreational assets, and protective dunes.[1] The ongoing erosion issues associated with South Beach have been highlighted in a U.S. Army Corps of Engineers (USACE) report (USACE 2011) in which it was estimated that the subject beach retreated 315 ft over a 9 year period during which 6 million cubic yards of material was placed on the shoreline through beach nourishment activities. This area of the island has experienced erosion issues for several years and various shoreline management responses have been implemented (beach nourishments, relocation, sand bag revetments, etc).

Bald Head Island is a south-facing three mile long island located east of the mouth of the Cape Fear River. The island forms the southern end of the Smith Island complex at Cape Fear Point. Inlet management has been ongoing at the Cape Fear River entrance since 1822.[2] Several modifications to the navigation channel have occurred over the years to accommodate larger ships. Since 2000 the Wilmington District USACE has implemented the Wilmington Harbor Sand Management Plan which has included disposing of beach-quality sand from the maintenance activities of the inlet onto Bald Head Island and Oak Island/Caswell Beach. One of the main objectives of this plan was to keep beach-quality sand in the littoral system of the islands. Since 2000 there have been seven disposal events that have deposited beach-quality

1 p. 1-1 of DEIS
2 p. 1-3 of DEIS

sand on South Beach (Federal and Island Funded).[3] In addition to these nourishment activities, a sand tube groinfield was constructed in 1995. Due to frequent storms the groinfield has had several maintenance events, which have include replacing sand tube groins as needed. In addition to the sand tube groindfield, bag revetments have been constructed in the project area to slow chronic erosion at South Beach.

It is stated in the DEIS that the "Project Goal and Objectives" for the proposed action are the following:

- To reduce sand losses from beach disposal or construction (either federal disposal actions or Village-sponsored beach nourishment projects) along the inlet margin; and
- To effectively control shoreline alignment along the westernmost segment of South Beach in such a manner to reduce alongshore transport rates and shoreline recession.

The USACE appropriately provided an opportunity for the public, interested stakeholders, and federal and state agencies to provide comments on this proposed action in 2012. In addition to hosting a meeting (Meeting Notes – Appendix C), the USACE also created a project review team (PRT) to solicit input on main issues related to the proposed action. A list of members of the PRT is provided in Table 2.1 of the DEIS. A summary of comments received during scoping is provided in Appendix C. Examples of some of the issues highlighted during scoping include:

- Concerns about timing of construction and coordination with the Wilmington Harbor SMP
- Concerns that nourishment may coincide with piping plover and sea turtle nesting periods
- Concerns that the terminal groin will alter larval transport and impact important fish habitat
- Concerns that the project may cause adverse impacts downstream
- Request for the EIS to include a description of monitoring and adaptive management
- Request for the EIS to include detailed information about storm impact and effects upon the terminal groin and also on the inlet dynamics and morphology, the beach profile, sand resources, residential structures, private property, adjacent properties, and the natural resources and environment of the permit area due to the placement of the terminal groin
- Request for the EIS to include detailed information and modeling on the impacts of sea level rise on the terminal groin and the resulting effects upon inlet dynamics, adjacent property, beach profiles, residential structures and the natural resources and environment of the island and adjacent islands and estuarine habitats and resources.[4]

EPA also notes that the DEIS considers detailed alternatives for responding to the on-going erosion along the west end of South Beach of the Village of Bald Head Island. The DEIS includes detailed discussions of each alternative, how each was formulated, and the costs of

3 Table 1.2 – p. 1-8 of DEIS

4 This is not meant to include a summary of all of the comments and issues noted during scoping – just a sampling. For additional scoping comments see Appendix C of the DEIS.

implementation. An economic impact assessment on the existing island development and infrastructure is also included in the DEIS (Chapter 5). As requested by EPA for similar coastal erosion projects studied by the USACE, both "no action" and "abandon/retreat" were considered in the DEIS among the detailed alternatives:

- **Alternative 1** – No Action
- **Alternative 2** - Retreat
- **Alternative 3** – Beach Nourishment/Disposal with Existing Sand Tube Groinfield to Remain in Place
- **Alternative 4** - Beach Nourishment/Beach Disposal and Sand Tube Groinfield Removal
- **Alternative 5** – Terminal Groin with Beach Nourishment/Beach Disposal (Sand Tube Groinfield Remaining)
- **Alternative 6** - Terminal Groin with Beach Nourishment/Disposal (Removal of Sand Tube Groinfield)

General EPA Comments:

Water Quality – Section 4.5 provides a discussion of existing water quality conditions for the project area. EPA notes that discussions relating to waters meeting their designated use as defined by State Water Quality standards are missing in this section. **Recommendation:** EPA recommends the FEIS include additional information on existing water quality in the project area, such as 303(d) listed waters, TMDLs developed for waters in the area, and any other relevant water quality conditions. Maps are often useful when conveying existing water quality conditions in and around project areas.

Summary of Environmental Consequences – An alternatives matrix is provided in Appendix L. EPA notes that the table includes a summary of the alternatives in relation to threatened and endangered species and habitat type, but not other resources areas such as water quality and air quality. **Recommendation:** EPA appreciates the inclusion of this table in Appendix L; however we recommend that additional resources discussed in Chapter 5 be added.

Sea-Level Rise – It is stated in the DEIS that "Over a nine-year period, the range of potential sea level rise and corresponding influence on numerical morphological modeling is negligible."[5] While EPA agrees that sea-level rise over a 9-year period may be negligible, we are unclear on why the discussion of sea-level rise is not in the context of the entire project life (30-years). **Recommendation:** EPA recommends that additional discussion be added to the FEIS relating to why sea-level rise estimates are not discussed in the context of the entire project life (30 years).

Delft 3D Model Assumptions – The Delft 3D model is central to describing/predicting how the shoreline will respond to all of the alternatives evaluated in the DEIS. Several references are made regarding using a 9-year model simulation, however the project life is 30 years. EPA is

5 p. 5-2 of DEIS

unclear on why model runs were 9-years while the project life is estimated much longer. In addition, EPA notes that minimal information is provided on assumptions and calibration of the Delft 3D model. **Recommendation:** EPA recommends additional discussion be provided in the FEIS main document or appendix which clearly outlines Delft 3D model assumptions used to evaluate all alternatives. We also recommend that the FEIS include a discussion relating to the the selection of all modeling parameters and justification for the values specified. We also recommend that the results of sensitivity analyses (if applicable) of all modeling parameters and that the selection of calibration/validation periods and application of forcing conditions be provided in the FEIS.

Environmental Justice – EPA notes that no Environmental Justice analysis was provided in the DEIS. **Recommendation:** Consistent with Executive Order 12898 entitled "Federal Actions to Address Environmental Justice In Minority Populations and Low-income Populations" and the accompanying Presidential Memorandum, EPA recommends that USACE analyze the potential for disproportionately high and adverse effects on low-income or minority populations for this project.

Cumulative Impacts - CEQ defined a cumulative effect as "an impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7). EPA notes that for some resources discussed in the DEIS, consideration of future impacts from development may have not been fully considered. For example, for the discussion of the alternatives impacts on resources such as maritime thicket/forest and interdunal wetlands, it is stated that there will be no cumulative impacts associated with alternatives 5&6. However, it appears from Figure 3.1 that there may be undeveloped lots in the area that will be protected by alternatives 5&6. It's reasonable to anticipate additional future development in these areas, which would be considered a future impact on these resources. **Recommendation:** EPA recommends revising the cumulative impact discussions in the FEIS to include future actions (such as continued development of the island) that may impact resources.

Threatened and Endangered (T&E) Species – EPA notes that the construction of the terminal groin may require work to be conducted within the sea turtle moratorium.[6] EPA also notes that construction of the terminal groin and beach nourishment activities may impact nesting activities of shoreline birds such as the piping plover. EPA is concerned about these potential impacts to T&E species but defers to the US Fish and Wildlife Service. **Recommendation:** EPA recommends that the USACE continue consultation with the USFWS regarding species listed under the Endangered Species Act (ESA). In addition, EPA recommends that the USACE consult with the NMFS regarding potential impacts to essential fish habitat, if NMFS has not already been consulted. Additional information relating to consultations with USFWS or NMFS between the release of the DEIS and FEIS should be included in the FEIS.

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6 p. 5-23 of DEIS

Coordination with SHPO – EPA notes that the DEIS describes a potential historical shipwreck discovered during a 2012 marine remote-sensing survey that identified the remains of a 160- to 190-ft sailing vessel (potentially from the early 1900s) within the project area.[7] EPA also notes that the VBHI has engaged the State Historic Preservation Office (SHPO) and a 150ft buffer has been proposed to preserve the surviving vessel remains. **Recommendation:** EPA recommends continued coordination with the SHPO through the life of the project, and that all project construction operations avoid the shipwreck and follow-up investigations continue to keep this cultural resource accurately mapped in order to protect it during all construction activities, as well as future maintenance operations (including periodic nourishment).

Inlet Management Plan – Appendix B provides a copy of the VBHI Draft Inlet Management Plan, which is required by SB110. The plan is required to include the following elements:

1) Description of post-construction monitoring activities.
2) Define baseline for assessing adverse impacts and when these impacts must be mitigated.
3) Provide mitigation measures that would be implemented if impacts needed to be mitigated.
4) Provide for modification or removal of the terminal groin structure if the adverse impacts can't be mitigated.[8]

EPA is unclear on why post-construction surveys on Oak Island will terminate after 3 years "of monitoring subsequent to terminal groin structure completion fails to indicate any level of cause or effect relationship between structure installation and shoreline change."[9] Is this timeline defined in SB110? EPA is also unclear on what level of erosion or adverse impact to Oak Island would trigger mitigation and potentially the removal of the terminal groin structure. **Recommendation:** EPA recommends clarification of post-construction monitoring requirements and the triggers/thresholds for requiring mitigation be discussed in the FEIS.

Editorial Comments:

- **Table 1.2 –** Station numbers are referenced in this table with no reference to a map of the actual stations. EPA recommends adding a reference in the FEIS to a map of the station numbers for the description of this table.
- **Section 4.1.2 –** This section includes a description of several sources of sand for the sand fillet. EPA recommends these sources along with the sediment characteristics be summarized in a table in the FEIS for better comparison.
- **Section 4.3.1 (p. 4-20)** – End of 1st paragraph – The discussion of benthic taxa includes a statement from a report that says "In general, the mean taxa were low at all sites studied" What is the species abundance being compared to? Is the reference site comparable to the project site? EPA recommends this statement be clarified in the FEIS.

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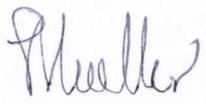
7 p. 5-146 of DEIS
8 Summarized from Appendix B
9 p. 5 of Appendix B – Inlet Management Plan

- **Page 4-33 –** SA, SB, SC should be defined in the text.
- **Figure 4-30 –** It is assumed that the size of the arrows in this figure correspond with amount of sediment is being transported. EPA recommends this be clarified in the Figure description in the FEIS.
- **Page 4-51 - 1st Paragraph** – This section includes a discussion of beach profiles 35 and 40 at Oak Island/Caswell Beach. It is indicated in this section that prior to 2000 the beach was growing seaward then after 2000 these profiles indicated that the beach is moving landward or eroding. EPA recommends additional discussion be added to the FEIS regarding the potential reasons for this erosional "hot spot."
- **Section 4.19.1** – A statement is made in this section that "there have been no known sources of contamination (i.e. spillage, treatment, or storage of toxic substances) within or near the project area." Has this statement been substantiated with Phase I Baseline Environmental Assessment of the project area? If so, it should be noted in the FEIS.
- **Tables 5.2–5.4** "Area 1" and "Area 2" should be defined more clearly in the text and in the description of table 5.2.
- **Section 5.9 and 5.11 –** These sections cover impacts associated with the alternatives on Public Safety and Recreation. EPA recommends providing maps of areas that may be closed to the public during construction activities.

Thank you for the opportunity to comment on this DEIS. Based upon our review, a NEPA rating of EC- 2 has been assigned to this DEIS, meaning we have environmental concerns and have requested that the FEIS include updated information (where available) on a number of areas and issues. If we can be of further assistance, please contact me at (404) 562-9611 or Dan Holliman at (404) 562-9531 at holliman.daniel@epa.gov.

Sincerely,



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